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rot develops the more regular are the rings of pustules. In many cases the decaying areas are found near the basin and cup ends of the apple along with apple scab fungus, in codling moth burrows, and in bruised places but over 50 per cent. of the cases observed show that the fungus enters directly through the epidermis of the fruit.

Moisture and temperature exert a marked influence on the development of the rot. In cool, dry weather the spots increase in size, but few pustules are developed. During cool, damp weather an abundance of pustules were found. There is also a tendency for varieties of fruit to decay more rapidly than others.

Examination of the fungus in numerous collections of infested bark gave forms that did not fully agree with the descriptions by Cordley and Peck. The description of the fungus as observed in these investigations is as follows:

Parasitic in the bark and sapwood of the trunk and the branches and on the stored fruit of the cultivated apple.

In the Bark. — Infested areas depressed, dark brown to blackish, oblong in outline one-fourth to six inches in length or longer; sometimes merging together when fully grown, free from the sapwood and bounded by a ragged fissure; acervuli (pustules) abundant, irregularly but quite equally distributed; round to oblong 200-900 mmm. in length, averaging 400-700 mmm., rupturing the epidermis, exposing a creamy white mass, later becoming black; pycnidia absent; stroma usually flattened rarely concave, bearing numerous simple or branched, septate conidiospores as long as, or longer than the conidia; conidia borne acropetally, non-septate, hyaline or rarely with a greenish tint, oblong, geniculate or usually curved 3.8-5 mmm. x 15-20 mmm.

On the Fruit. — Decaying spots light to dark brown, concave, dry and leathery; acervuli numerous, usually larger than those in bark, usually concentrically arranged; stroma as described above; conidiospores longer, usually much branched, conidia varying much in size and shape, as long as 30 mmm.

GOMPHIDIUS RHODOXANTHUS ONCE MORE.

D. R. SUMSTINE.

Agaricus rhodoxanthus Schweinitz, Syn. Car. p. 83. 1822.

Gomphus rhodoxanthus Schweinitz, Syn. N. A. F. p. 151. 1834.

Paxillus flavidus Berk. Decades N. A. F. 116.

Flammula rhodoxanthus Lloyd. Mycolog. Notes. Herbst, Fung. Flora Lehigh Valley.

Schweinitz changed the name from *A. rhodoxanthus* to *Gomphus rhodoxanthus* in his Synopsis in 1834. Fries in his

Epicrisis changed the generic name *Gomphus* to *Gomphidius*. This latter name has generally been used. *Paxillus flavidus* is no doubt a description of a very yellow form of the so-called *G. rhodoxanthus*. I have found many specimens that were yellow with no trace of red, especially so after they were dried. There seem to be no good reasons for placing this plant in the genus *Flammula* as has been done by Lloyd and Herbst.

The following are also considered as synonyms:

Clitocybe pelletieri Lev. Gill. Hymenomycetes, 1: 170.

Paxillus paradoxus Cooke, Cke. Handbook.

Flammula paradoxa Kalch. Fung. Hung.

Flammula tammii Fr.

Among the woody polypores we have the genus *Lenzites*, in which we find species with lamelloid and poroid hymenial surfaces. *Lenzites betulina* almost invariably has gills and yet it is placed among the polypores.

The genus *Boletinus* stands in the same relation to the Boleti as *Lenzites* does to the Polypori. It is to be expected that we will find in the genus *Boletinus* forms that partake more of the lamelloid than of the poroid structure.

Having collected several hundred specimens during the last three years and having carefully noted the permanent character as well as the variations, I am forced to the conclusion that this plant does not belong to the agarics. The pileus always indicates a Boletus, and is covered with a tomentum closely resembling *Boletus subtomentosus* as has been suggested by Schweinitz. Veins connecting the gills are found in all specimens. These veins may be small or they may become transverse partitions forming large pores. Some of my specimens show both lamellae and pores. One specimen has true pores. Therefore considering the surface of the pileus and the variable character of the hymenium, which is both lamelloid and poroid, I suggest a new name for this plant, *Boletinus rhodoxanthus* (Schw.) Sumstine. Requiescat in pace.

Kittanning, Pa., Aug. 5, 1905.